Logistics & Traceability

planning & material management @ FOOD SAFETY

SION 18th MARCH 2010

agenda

- presentation
- traceability definition
- logistics elements
- traceability definitions
- do you speak systems ?
- performance management
- anecdotes
- keep an eye on

presentation

project leader
1998 - 2000

R&D operations & texturisation

Nestlé PTC Orbe

project manager
2000 - 2003

industrialisaton & process engineer

Nestlé Suisse SA - arômes industriels - fabrik Kempttal

production manager
2003 - 2004

technological support group

Givaudan Schweiz AG - Flavours Production Kemptthal

project supply chain process manager
2004 - 2006

global supply chain strategy

Firmenich SA - Corporate Center Meyrin

operation director
2006 - 2008

head of operations

LeShop.ch - Corporate Center Chavannes-de-Bogis

founder azeo.ch
2007

Operation & business process

Lausanne

head of logitics
2008

head of operations

Huntsman - Monthey

traceability definition

ISO definition

traceability is the ability to trace the history, application, or location of that which is under consideration

that which is under consideration - a truck or a grain of wheat ?

a standard location - field, farm or country ?

standard identification technology - pen and paper or computer ?

does not specify that hamburger be traceable to the cow or that the wheat in a loaf of bread be traceable to the field

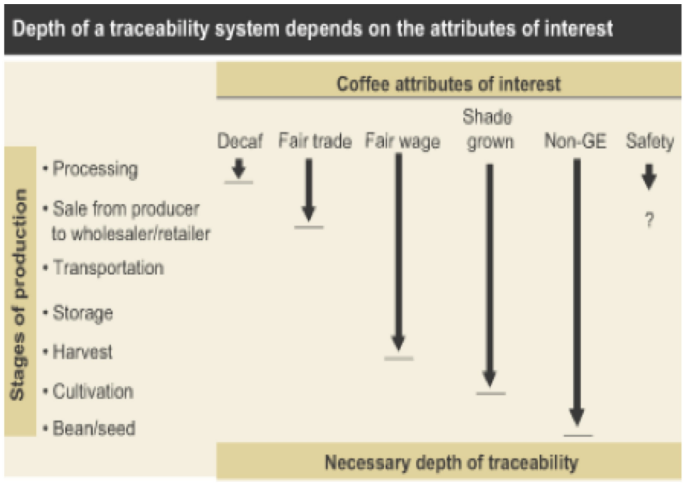
traceability definition

the definition of traceability is necessarily broad because food is a complex product and traceability is a tool for achieving a number of different objectives and no traceability system is complete

breadth: describes the amount of information collected

depth: is how far and forward the system tracks the relevant information

precision: reflects the degree of assurance with witch the tracing system can pinpoint a particular food product's movement or characteristics



traceability – what does it do ?

firms have 3 primary objectives in using traceability systems:

- facilitate traceback for food safety and quality
- differentiate and market food with subtle quality attribute
- improve supply chain management

benefits associated includes

- reduced recall expenses
- expanded sales of products with attributes that are difficult to discern
- lower supply chain costs

in conclusion traceability offers larger net revenues for the firms

what is logistics ?

THE VERY WELL KNOW LOGISTICIAN GENOTYP:

name : ROBERT

passions : trucks and pirelli calendar

prior employment : cook

physical description : 1.87m - 138 kg - dark hair

particularity: smells a mixture of transpiration, alcohol & diesel

by chance logistics moved from this old vision to

supply chain management

what is supply chain management ?

supply chain management (SCM) is the oversight of :

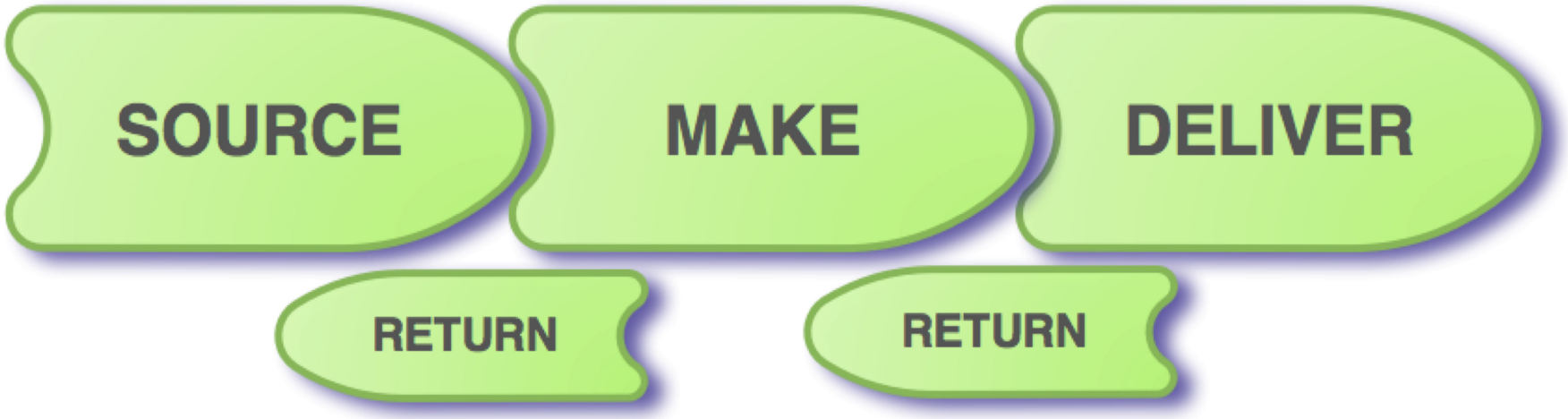
- **MATERIALS**
- **INFORMATION**
- **FINANCES**

as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer

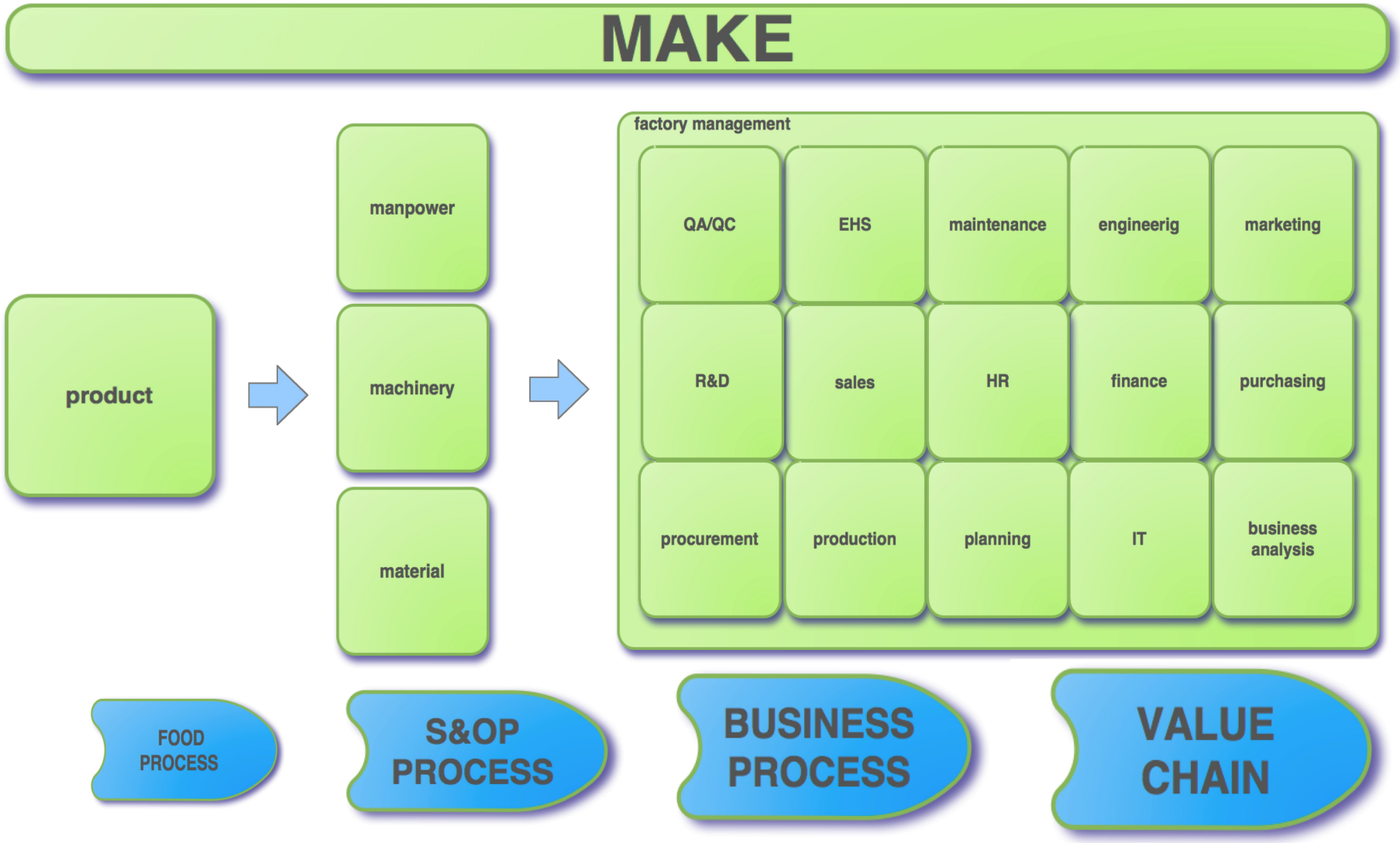
the state of the art is to produce the right product with the correct quantity at the defined time with the better cost

introduction & objectives

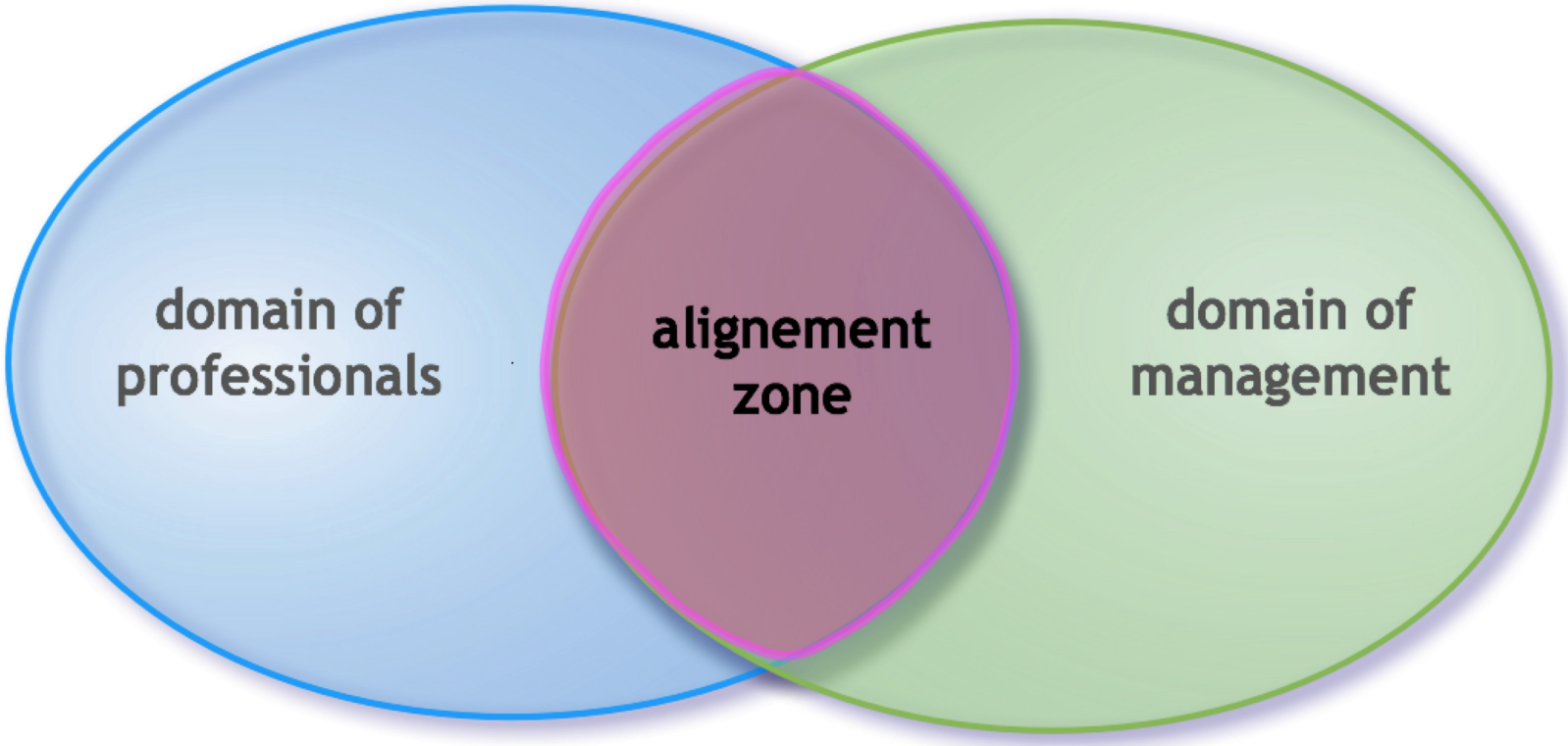
the supply chain SCOR model



introduction & objectives



introduction & objectives



introduction & objectives

material management

	CHF	prct_sales
revenue (sales)	**1'000'000**	**100%**
cost of goods sold	**900'000**	***90%***
direct material	*500'000*	*20%*
direct labor	*200'000*	*20%*
factory overhead	*200'000*	*20%*
gross profit	**100'000**	**10%**

increasing business performance

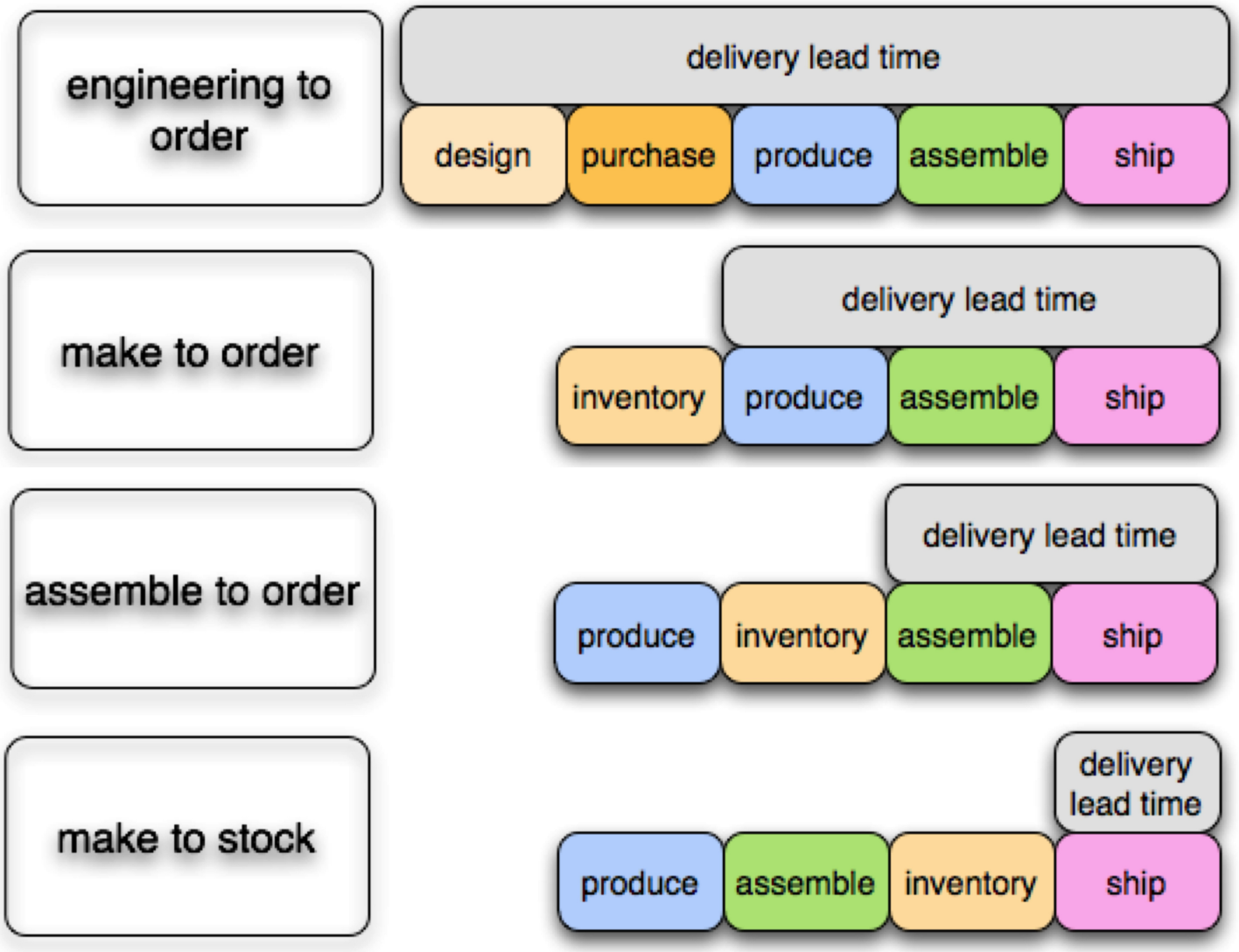
	CHF	prct_sales
revenue (sales)	**1'000'000**	**100%**
cost of goods sold	**840'000**	**84%**
direct material	*450'000*	***45%***
direct labor	*190'000*	***19%***
factory overhead	***200'000***	*20%*
gross profit	**160'000**	**16%**

to obtain same results without optimisation, sales must increase to

	CHF	prct_sales
revenue (sales)	**1'200'000**	**100%**
cost of goods sold	**1'040'000**	**87%**
direct material	*600'000*	***50%***
direct labor	*240'000*	***20%***
factory overhead	***200'000***	*17%*
gross profit	**160'000**	**16%**

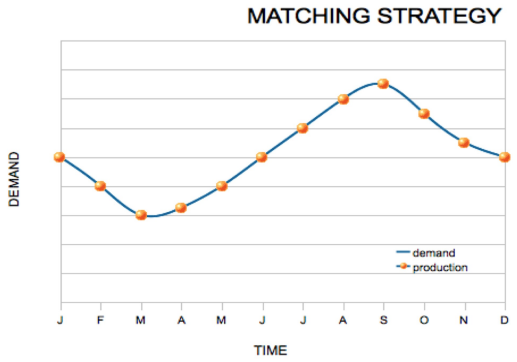
introduction & objectives

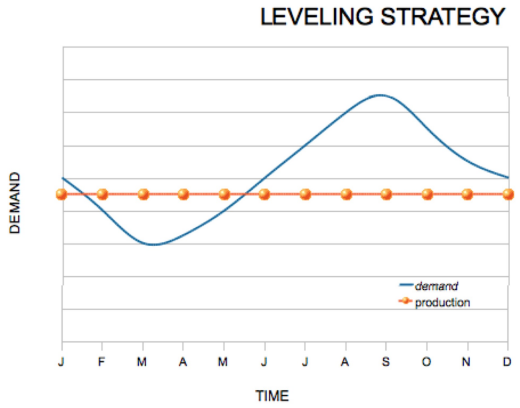
product strategy

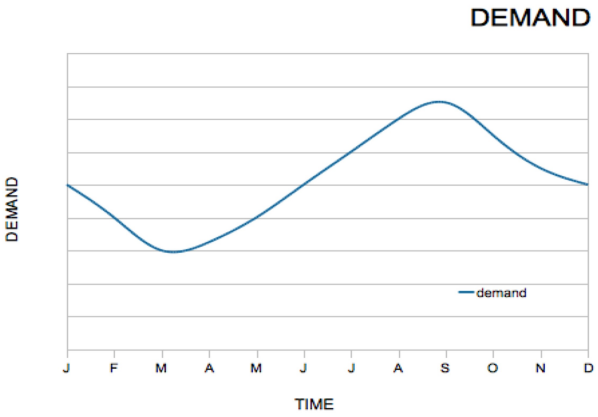


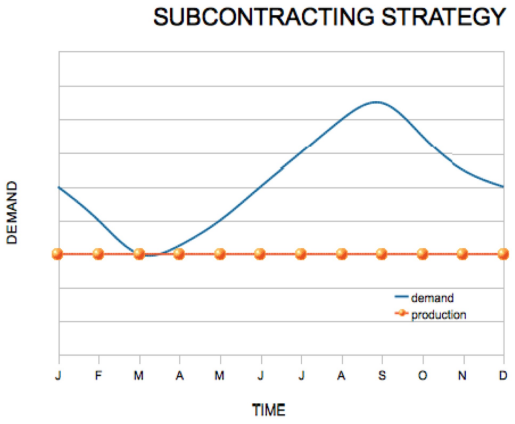
introduction & objectives

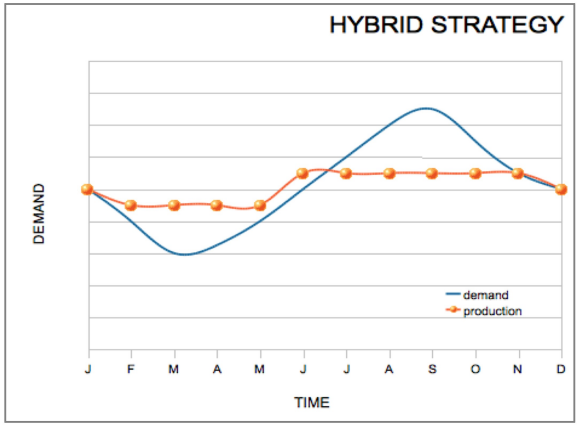
production strategy





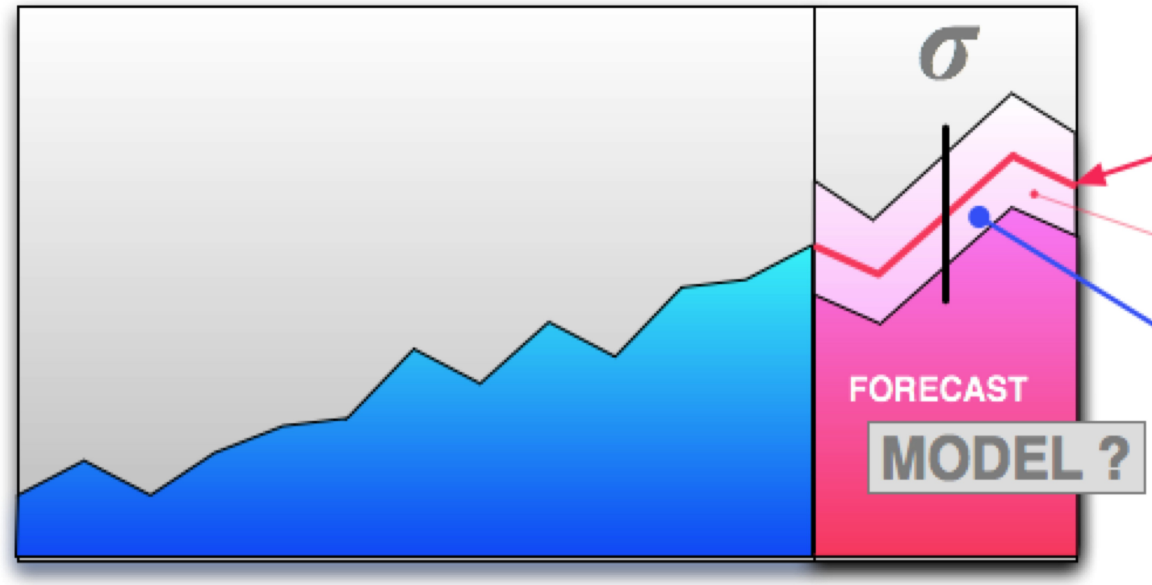






introduction & objectives

forecasting

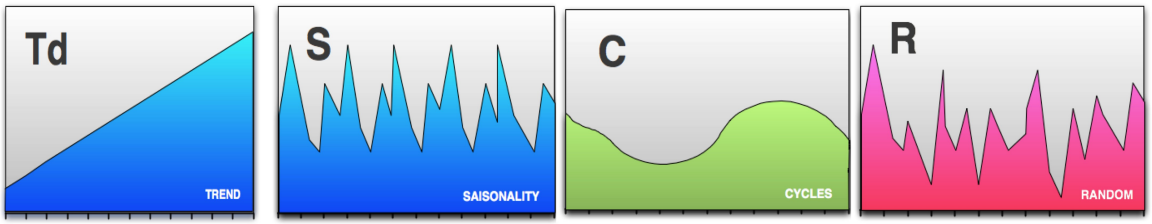


MODEL :
- TREND
- CYCLE(S), SAISONALITY

RANDOM

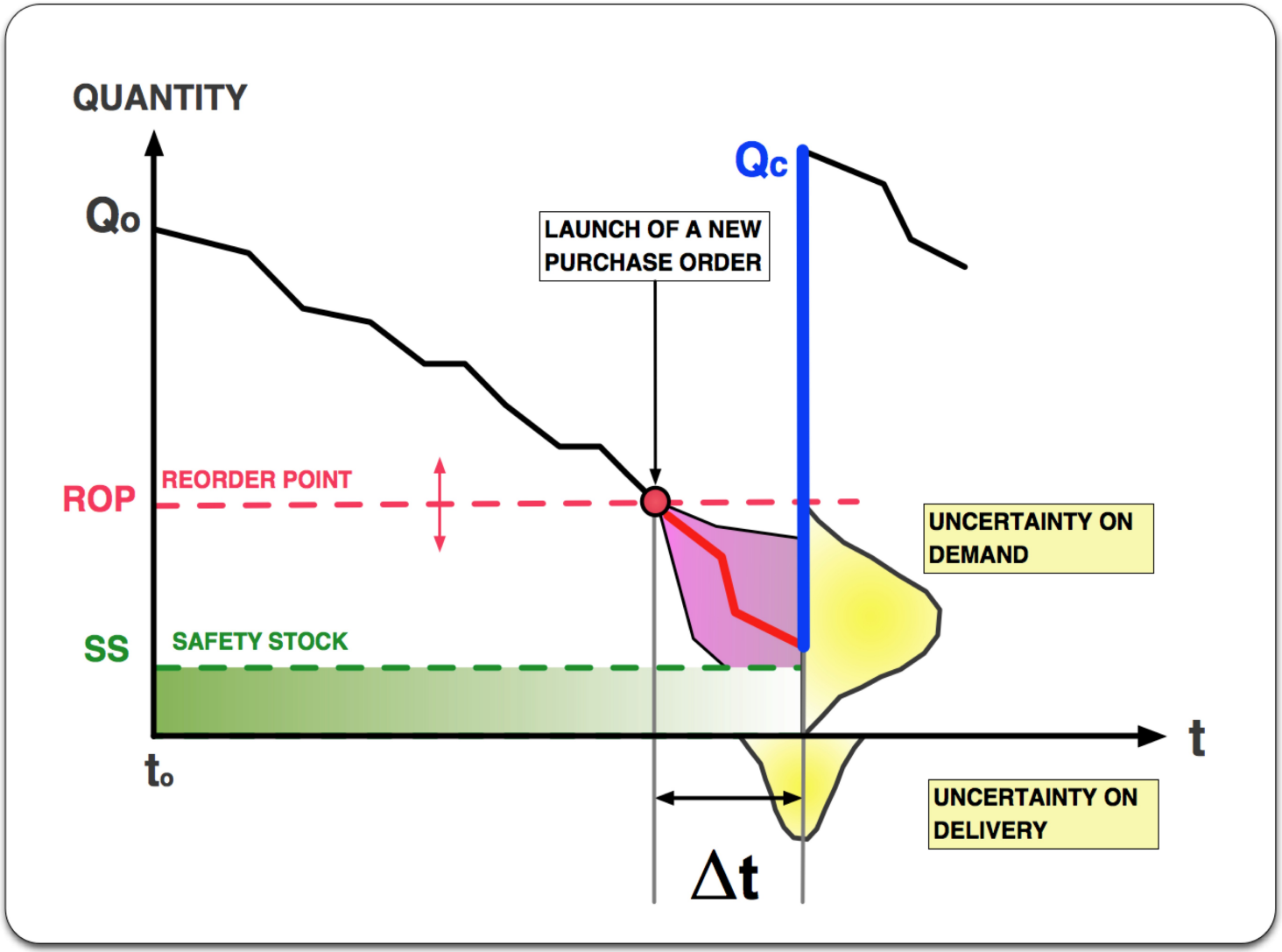
DEMAND ANALYSIS

IMPACT ON:
- purchasing policy
- stock management
- service level



introduction & objectives

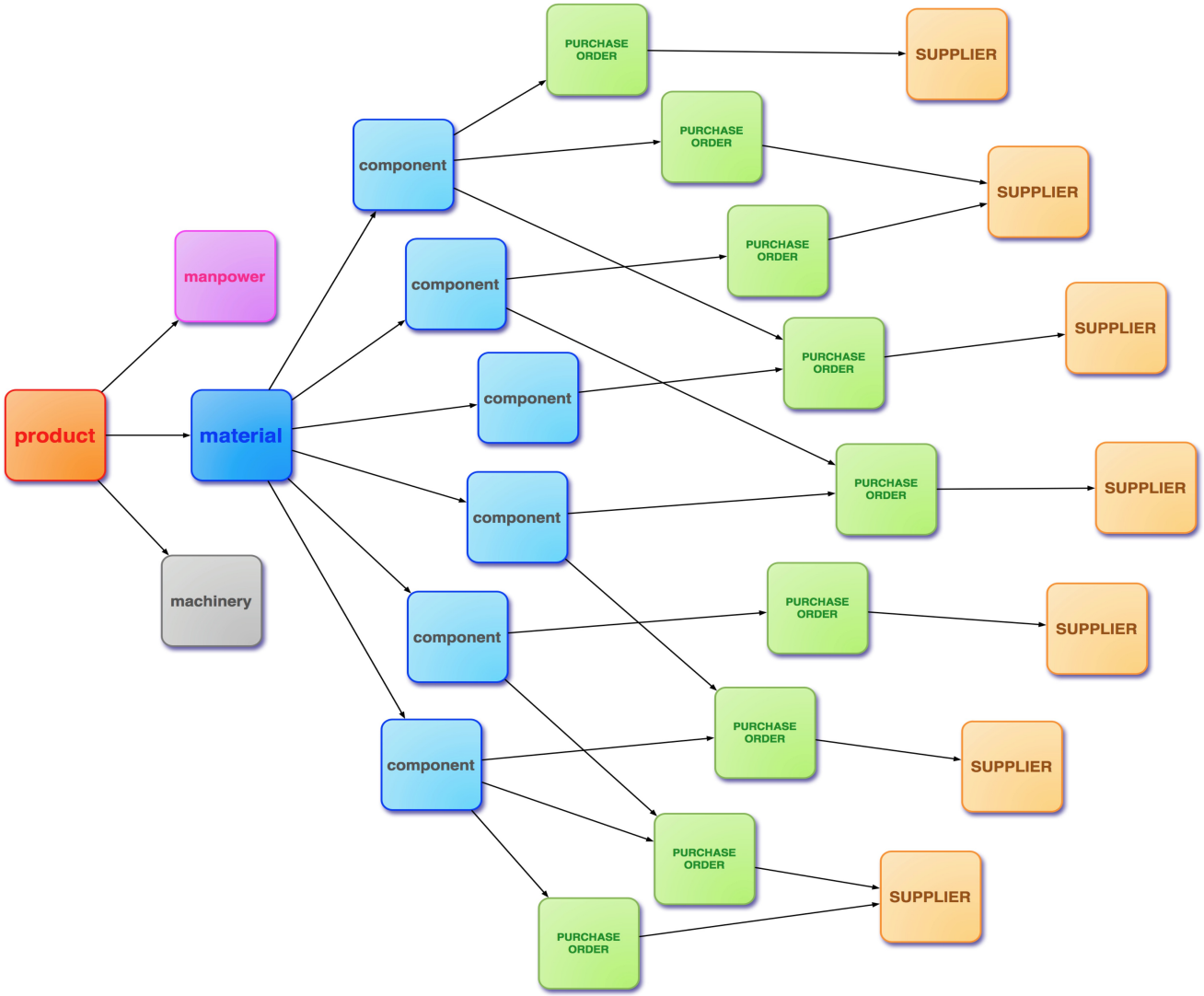
delivery uncertainty



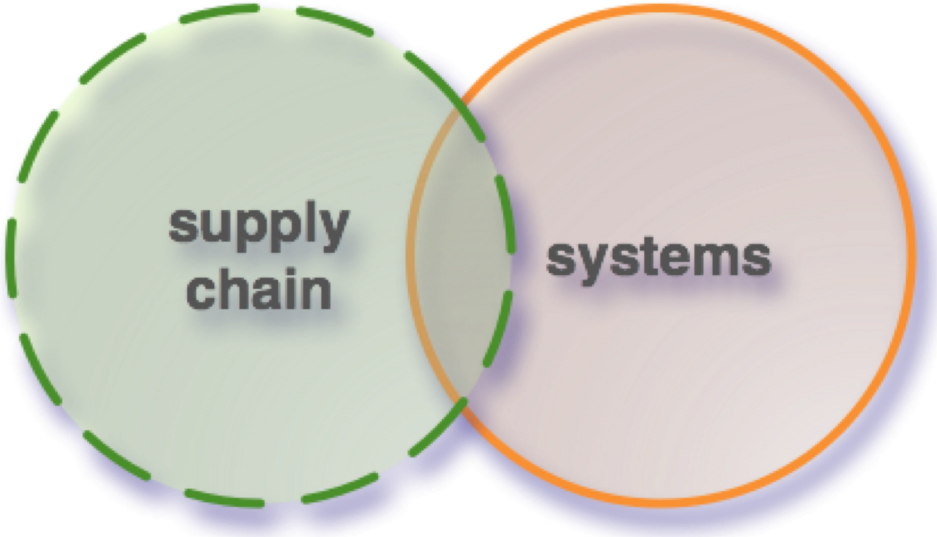
agenda

▪ presentation	10’
▪ introduction & objectives	
▪ introduction to material management	
▪ traceability definitions	10'
▪ management flow elements	20'
▪ process game on good reciept	
▪ inventory constraints	
▪ keep an eye on	20’

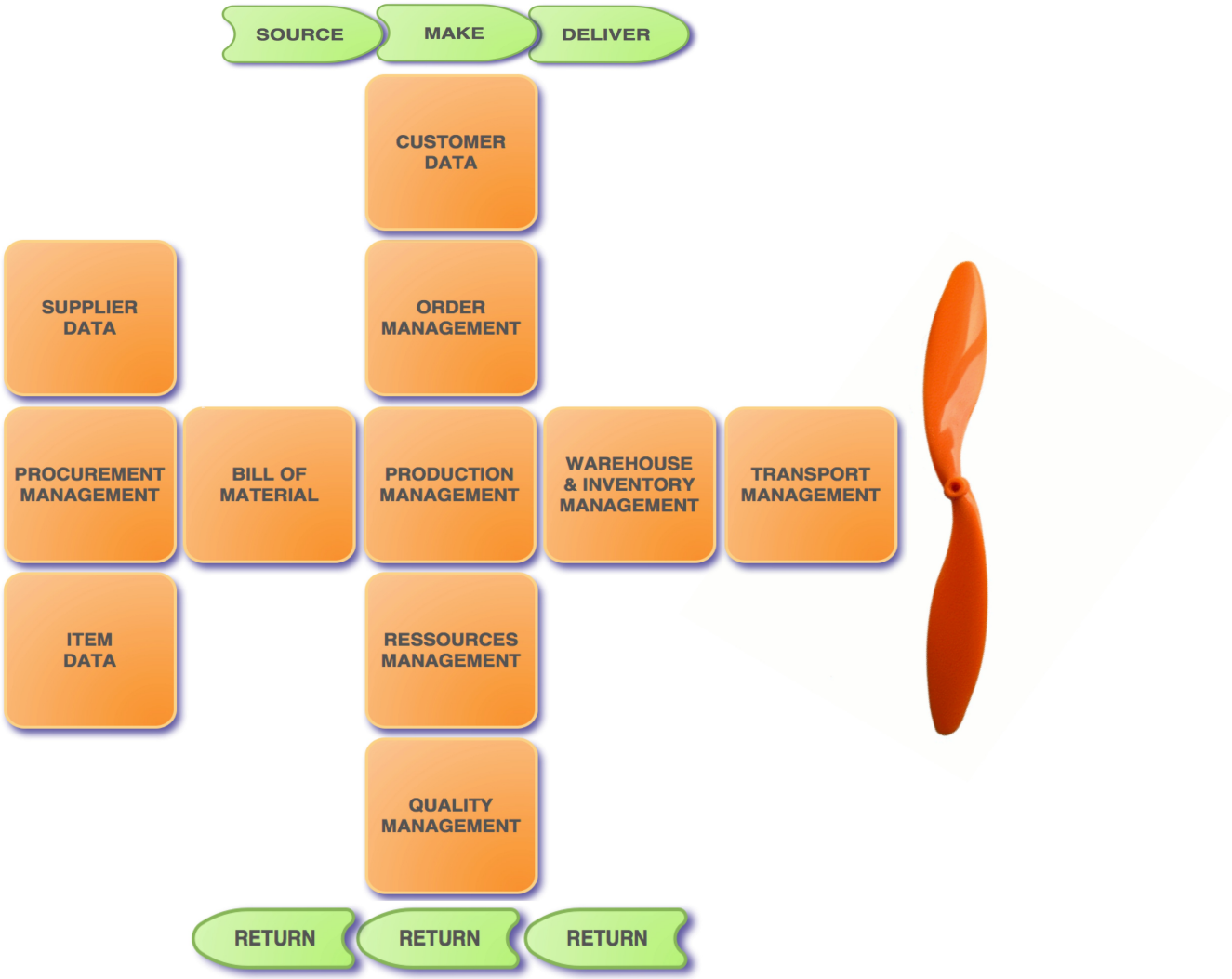
traceability and supply chain



how to support traceability ?



system elements - architecture



systems elements - barcoding

definition

barcode is an optical machine-readable representation of data, which shows certain data on certain products

major standards

UPC : Universal Product Code

EAN : European Article Numbering

ISBN: International Standard Book Number

GS1-128 (EAN/UCC 128)

systems elements - barcode generator

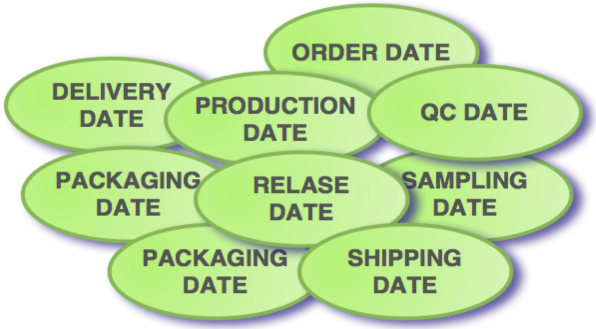
Positions	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}
Number ***without*** Check Digit	6	2	9	1	0	4	1	5	0	0	2	1	-
Step 1: Multiply	x	x	x	x	x	x	x	x	x	x	x	x	-
by	1	3	1	3	1	3	1	3	1	3	1	3	-
Step 2: Add results	=	=	=	=	=	=	=	=	=	=	=	=	-
to create ***sum***	6	6	9	3	0	12	1	15	0	0	2	3	= **57**
Step 3: Subtract the **sum** from nearest equal or higher multiple of ten = 60- 57 = 3 (Check Digit)													
Number ***with*** Check Digit	6	2	9	1	0	4	1	5	0	0	2	1	**3**

http://www.gs1.org/barcodes

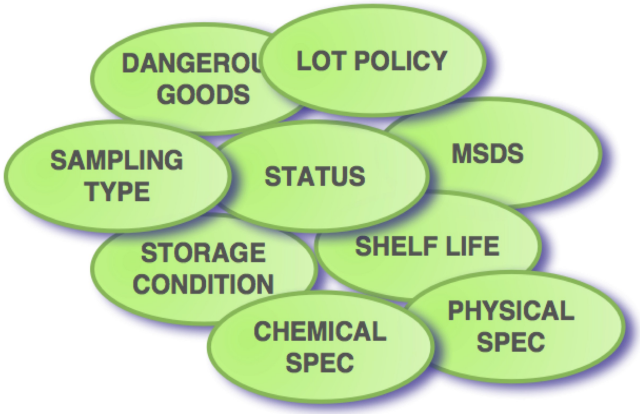
systems elements

description

date management



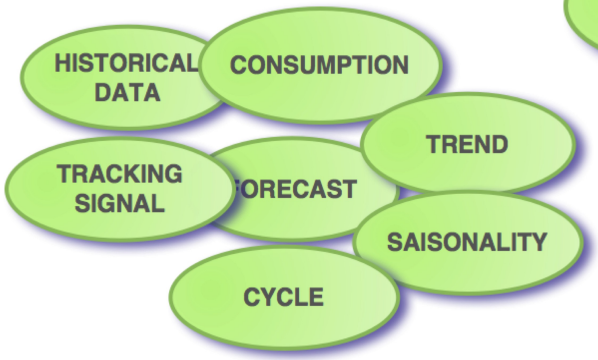
QC/QA



ITEM DATA

material

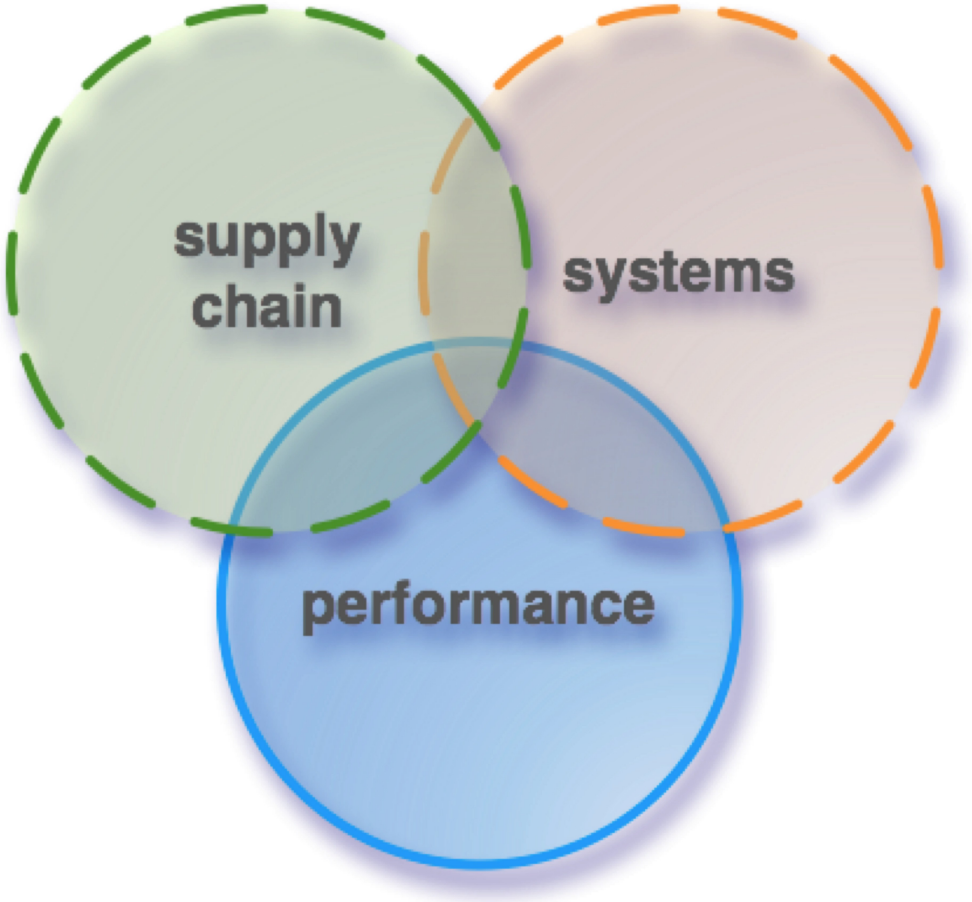
business analysis



inventory& costs

where does start performance ?

… is during product design...?



performance definition

performance management includes activities to ensure that goals are consistently being met in an effective and efficient manner

performance management can focus on performance of the organization, a department, processes to build a product or service, employees

performance

quick time notion

standard time time it would take a qualified operator working at a normal pace to do the job

available time is the number of hours a work center can be used

rated capacity is the result of calculated capacity, utilisation and efficiency

demonstred capacity is the result of previous production records to determine work center capacity

$$rated\ capacity = (available\ capacity) * (utilisation) * (efficiency)$$

$$efficiency = \frac{actual\ rate\ of\ production}{standard\ rate\ of\ production} * 100$$

$$utilisation = \frac{hours\ actually\ worked}{aviable\ hours} * 100$$

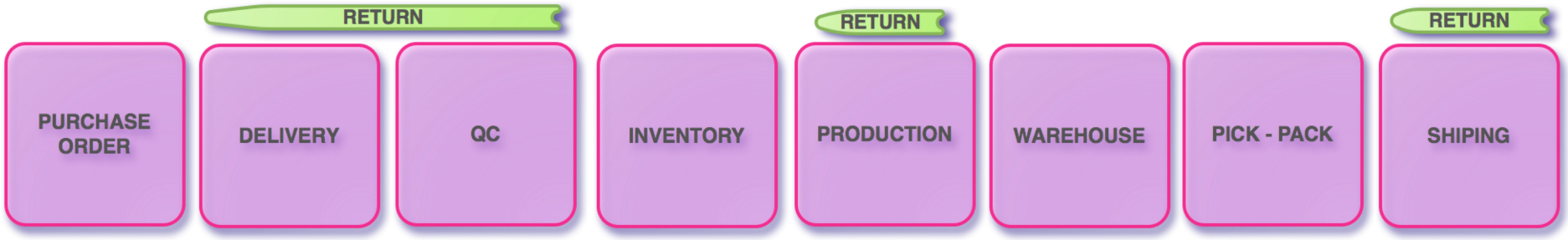
$$capacity\ required = (actual\ time) * (efficiency) * (utilisation)$$

LEAD TIME = QUEUE TIME + SET UP TIME + RUN TIME + WAIT TIME + MOVE TIME

$$total\ standard\ time = (setup\ time) + (run\ time)$$

performance

goods reciept process



process description

- identification - check delivery vs order - sampling - lot assignation - labelling	- conformity - specification - taste testing - analysis - status change	- handling - storage position - storage conditions - status change - zoning	- quantity - rests - lot association - in transit inventory - set up time	- handling - slow movers - none mover - blocked stock - zoning - obsolete	- documents - packaging control - shipping labels - DGD	- disposistion - transport lead time - transport safety - transport traceability	

process elements

supplier performance OTIF supplier PO lead time PO vs demand MAPE	supplier evaluation OTIF supplier document performance	SPC release time results stats product deviation	inventory turns inventory targets number of movements	production rate BOM standard time utilisation waiting time planning efficency	fulfillment rate MTO/MTS ratio average storage time coverage period	handling volume destination minutes per order minutes per palets order typology

process indicators

anecdotes

- lot traceability in sugar silo
- lot traceability in tank farm
- picking by lot in salad barcode
- flavor kosher production

keep an eye on

- product design
- factory design
- system data
- business processes

thanks,
for your attention

for more information have a look on
www.azeo.ch

or contact me
nicolas@azeo.ch
+ 41 79 378 78 86

backup slides

other traceability definitions

the ability to trace (identify and measure) all the stages that led to a particular point in a process that consists of a chain of interrelated events

traceability refers to the completeness of the information about every step in a process chain

the formal definition: traceability is the ability to chronologically interrelate uniquely identifiable entities in a way that is verifiable

traceability is the ability to verify the history, location, or application of an item by means of documented recorded identification

traceability definitions

in logistics

traceability refers to the capability for tracing goods along the distribution chain on a batch number or series number basis

in measurement

the term traceability is used to refer to an unbroken chain of comparisons relating an instrument's measurements to a known standard

traceability definitions

food processing

the term traceability refers to the recording through means of barcodes or RFID tags & other tracking media, all movement of product and steps within the production proces.

one of the key reasons this is such a critical point is in instances where an issue of contamination arises, and a recall is required

during customer audit, traceability has an high impact in term of business continuity and production visibility